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luxuriant growth of grass covers them and, as I have before stated, the Bobolink and Savanna Sparrow are next door neighbors to *subvirgatus*. Quite different are the salt marshes of Prince Edward Island and of the St. Lawrence where the birds have been found. There short grass, bogs and few ditches are the rule, though the birds seem equally at home. They may fly considerable distances when disturbed, but are more likely to dive into the grass and defy all efforts to again flush them. Their flight is much steadier than that of the Savanna Sparrow and lacks the jerky undulations peculiar to that bird. I have already made two attempts to describe the song (Auk, IV, 1887, 239; Chapman's Birds E. N. A. 1895, 297), which varies little from that of *caudacutus* and much resembles the choking gasp of *Ammodramus maritimus*.

All my efforts to secure a nest have proved unsuccessful in spite of having devoted much time to the task. The difficulties of systematic search are many and, so far, chance has not favored me.

In closing I may say that the study of the Sharp-tails is beset with many difficulties and necessitates excursions devoted almost exclusively to their pursuit. Their exasperating shyness is another factor to baffle the bold observer who, regardless of mud and mosquitoes, invades their stronghold; but perseverance must win in the end and it is to be hoped only a few more years will be required before we are in possession of the facts now wanting to complete our knowledge of these marsh-loving birds.

SUMMER BIRDS OF THE ANTHRACITE COAL REGIONS OF PENNSYLVANIA.

BY R. T. YOUNG.¹

THE study of the birds which breed in the anthracite coal belt of Schuylkill, Carbon, and Luzerne Counties, Pa., is one of much interest to the ornithologist.

The fauna of this region is Alleghanian with, however, traces of the Carolinian fauna. Passing to the south of the Blue Mt.,

¹ Read before the Delaware Valley Ornithological Club of Philadelphia.

from Schuylkill into Berks County, the fauna merges gradually into the Carolinian, while in the northern portion of Luzerne County the Canadian element is found.

This region then, may be looked upon as intermediate between the Carolinian fauna on the south, and the Canadian on the north, which, together with the fact that ornithologists have given far more attention to the country farther north among the higher Alleghanies than they have to this section, makes it a field well worth studying.

The intermingling of Canadian and Carolinian species is well illustrated by the occurrence of the Junco near Penn Haven Junction, Carbon County, and the presence of the Yellow-breasted Chat at Harvey's Lake, as recorded by Mr. Witmer Stone (Proc. Acad. Nat. Sci. Phila., 1891, p. 431).

The notes from which this paper is written were gathered during June and July, 1895, while I was staying at Pottsville, Schuylkill County. Although I covered a considerable range of territory on various trips, the notes obtained are far from complete, as I had very little time to devote to collecting, and consequently my visits to many places were extremely brief.

The bulk of my time was spent in the near vicinity of Pottsville and in the neighborhood of Hazleton, Luzerne County, short trips being made to Hamburg, Berks County; Rock Glen, Lumber Yard, Nescopeck and Harvey's Lake, Luzerne County; while some work was done at Delano, Schuylkill County; Mt. Carmel, Columbia County, and along the Black Creek from Weatherly to Penn Haven Junction in Carbon County.

The appearance of the country throughout the coal-fields is bleak and uninviting. The general altitude varies from 1000 to 1800 feet; in no case I believe exceeding 2000 feet.

At Pottsville the Schuylkill River turns abruptly to the east and follows a pleasant farming valley for about twenty miles to Tam-aqua. This valley is the southeastern boundary of the coal beds. To the northwest of it from near Mauch Chunk on the east to some distance west of Pottsville, the country is hilly and broken; ridge succeeding ridge with long narrow valleys between, the ridges rising usually not more than 100 to 200 feet above the valleys. The barren, rocky soil is covered with a scanty growth

of chestnut and oak in some places, which in others gives way to the pitch pine, while scrub oaks and blueberry vines form a thick undergrowth.

In many places dead trees and stumps form convenient nesting-sites for House Wrens, Crested Flycatchers and Flickers. These birds are more numerous in such localities than elsewhere, the merry song of the House Wren in particular being heard on every side, while the Towhee and Chestnut-sided Warbler are also most characteristic species.

Besides the Schuylkill River the principal streams of the region visited are Black and Nescopeck Creeks. The former, which is a stream of thirteen miles in length, has its source in the mine streams of Hazelton and empties into the Lehigh River at Penn Haven Junction, falling in its course 800 or 1000 feet. From Weatherly the stream flows through a deep, narrow gorge with the hills rising almost perpendicularly on either side, some 300 feet. Some little hemlock growth covers these hills while along the stream are found a few wild cherry trees together with some pine, aspen, and birch.

From Tomhicken the Nescopeck Creek flows to the west joining the east branch of the Susquehanna at Nescopeck. Along the hills between which it flows there is also a considerable growth of hemlock and a few white pines. There is also some little hemlock near Pottsville.

Along the edges of the streams in the lower parts of the country, as at Pottsville and Weatherly, the rhododendron grows in wild profusion in the denser woods, in some places forming almost impenetrable thickets, while the laurel seems more abundant on the open hillsides and is not restricted so much to the lower valleys.

One of the most characteristic birds of these rhododendron thickets near Pottsville is the Hooded Warbler, which may be heard singing occasionally quite late in August. The distribution of this species seems worthy of note. Occurring as a common summer resident in the swamps of southern New Jersey, it is not found, so far as I know, anywhere in the vicinity of Philadelphia, except as a rare migrant, and then appears rather commonly along the Blue Ridge and near Pottsville.

LIST OF SPECIES OBSERVED.

My time was too short to enable me to give a complete list of birds at each locality I visited, so I have endeavored merely to give as comprehensive a list as possible of the species observed within the limits of the coal-fields.

1. *Ardea virescens*. GREEN HERON.—This was the only Heron noted, one being seen at Hamburg and one family at Pottsville.

2. *Actitis macularia*. SPOTTED SANDPIPER.—While fairly common along the Schuylkill at Hamburg and the Susquehanna at Nescopeck, I did not observe this bird anywhere through the coal country during the breeding season, although I thought I distinguished its note at Lumber Yard on one or two occasions.

I saw Spotted Sandpipers on Tumbling Run dam on or about August 4, a point I had not visited about Pottsville during the breeding season.

3. *Ægialitis vocifera*. KILLDEER PLOVER.—The Killdeer does not seem to extend north of the Blue Ridge; a few at Hamburg being the only ones I noted.

4. *Bonasa umbellus*. RUFFED GROUSE.—Occurs at Nescopeck, just north of the coal region but I did not find it anywhere to the south.

5. *Colinus virginianus*. BOB-WHITE.—A Quail was heard whistling once or twice at Lumber Yard.

6. *Zenaidura macroura*. DOVE.—Doves, while pretty generally distributed, seemed rather scarce through the mountains.

7. *Falco sparverius*. SPARROW HAWK.—One or two noticed for several days along Black Creek above Penn Haven Junction and I have no doubt they breed there.

Of the other rapacious birds which may breed throughout this region, I know but little. I did not see any Owls and the three or four large Hawks which I noticed I failed to identify positively.

8 and 9. *Coccyzus americanus et erythrophthalmus*.—Both species of Cuckoo were observed but as to their comparative abundance I cannot say. They seemed rather more common at Pottsville than elsewhere.

10. *Ceryle alcyon*. KINGFISHER.—One was seen at Nescopeck and about the end of August I saw one several times at Tumbling Run, but cannot say as to whether it bred near there or not.

11. *Dryobates villosus*. HAIRY WOODPECKER.—One was seen at Lumber Yard and also at Rock Glen.

12. *Dryobates pubescens*. DOWNY WOODPECKER.—Seen at Rock Glen.

13. *Colaptes auratus*. FLICKER.—Flickers seemed rather scarce throughout the region, a few being recorded near Hazleton and Penn Haven Junction.

14. *Antrostomus vociferus*. WHIP-POOR-WILL.—I recorded but one Whip-poor-will,—at Tumbling Run near Pottsville.

15. *Chordeiles virginianus*. NIGHTHAWK.—Quite common and pretty generally distributed.

16. *Chætura pelagica*. CHIMNEY SWIFT.—Occurs commonly throughout the region, seeming rather more abundant in the towns than on the mountains.

17. *Trochilus colubris*. HUMMINGBIRD.—A nest with two full-fledged young was found at Black Creek Junction, July 24.

Passing by the spot a few days previous my attention was attracted by the vicious attack of a Hummer on the head of a defenseless Catbird. This led to the discovery of the nest, situated on the branch of a pine tree about twelve feet from the ground. The only other points at which I observed this species were Hamburg and Harvey's Lake.

18. *Tyrannus tyrannus*. KINGBIRD.—Kingbirds were quite common throughout the region. I found a nest with three eggs at Pottsville, on June 30.

19. *Myiarchus crinitus*. CRESTED FLYCATCHER.—More or less local in distribution, being more common around Delano and Hazleton where dead trees are plentiful. At Pottsville I did not see them, though I noted several at Hamburg.

20. *Sayornis phœbe*. PHŒBE.—I have one record of the Phœbe from near Penn Haven Junction, where I saw one or two and during August. I also saw several near Audenried, in the western point of Carbon County.

21. *Contopus borealis*. OLIVE-SIDED FLYCATCHER.—My most interesting find of the summer was a set of two eggs of the Olive-sided Flycatcher at Lumber Yard, five miles east of Hazleton, on July 4; constituting, so far as I can ascertain, the first positive record of the breeding of this species in the State.

I first noticed this species at Delano on June 18, when I heard its note but failed to identify it. After I had taken the nest and eggs and shot the female, on July 6, the male still stayed in the same locality for several days, uttering its loud note and seeming particularly troubled when I came near. The last I saw of it was at Delano, on July 27. When I was securing the nest both birds were particularly bold, especially the female, coming near me and protesting vociferously against my intrusion.

22. *Contopus virens*. WOOD PEWEE.—Generally distributed but not very common in the mountains.

23. *Empidonax minimus*. LEAST FLYCATCHER.—One heard at Hazleton and one at Mt. Carmel. At Hamburg I saw two or three pairs, and on June 4 took a nest from an apple tree about twenty feet from the ground.

24. *Cyanocitta cristata*. BLUE JAY.—Two or three seen near Penn Haven Junction, and one pair at Weatherly, and two or three at Rock Glen. During August I found them near Audenried.

25. *Corvus americanus*. CROW.—Fairly common throughout the region. As their breeding season was pretty well over when I was there, they seemed rather unsettled in their movements.

26. *Molothrus ater*. COWBIRD.—Several seen at Hamburg, June 16, and a flock of four or five at Pottsville, July 11. North of this I did not find them, very likely because the country was not to their taste.

27. *Sturnella magna*. MEADOWLARK.—Not found north of Schuylkill Haven, except at Nescopeck, where I saw one.

28. *Icterus galbula*. BALTIMORE ORIOLE.—One seen at Lumber Yard early in June, but as it was seen only once I do not consider it a breeder there. This species was common at both Hamburg and Nescopeck.

29. *Quiscalus quiscula*. PURPLE GRACKLE.—Quite scarce all through the mountains, being noted at Hazleton, Pottsville and Nescopeck, where, however, but a few were seen.

30. *Carpodacus purpureus*. PURPLE FINCH.—Quite generally distributed and fairly common on the mountains.

31. *Spinus tristis*. GOLDFINCH.—While common at Pottsville and also noted at Rock Glen and Nescopeck, this species was not seen elsewhere in the coal regions.

32. *Poocætes gramineus*. VESPER SPARROW.—Several seen at Pottsville and Hamburg but none farther north.

33. *Ammodramus sandwichensis savanna*. SAVANNA SPARROW.—Occurs commonly at Hamburg and a few at Pottsville where I found a nest with four half-fledged young and one unfertile egg on July 21.

34. *Spizella socialis*. CHIPPING SPARROW.—Common throughout the region.

35. *Spizella pusilla*. FIELD SPARROW.—Common throughout the region.

36. *Junco hyemalis*. JUNCO.—A pair were observed at Black Creek Junction about the middle of July.

37. *Melospiza fasciata*. SONG SPARROW.—Common everywhere.

38. *Pipilo erythrophthalmus*. TOWHEE.—Common throughout the mountains, but I did not observe it at Pottsville during June or July. I saw them, however, in August in a spot not before visited, so they probably bred there.

39. *Passerina cyanea*. INDIGO BUNTING.—One of the commonest birds of this region. A nest with three fresh eggs, found July 14, at Pottsville seems a rather late record.

40. *Piranga erythromelas*. SCARLET TANAGER.—Several seen at Weatherly and near Penn Haven Junction, also one at Rock Glen.

41. *Progne subis*. PURPLE MARTIN.—I observed one pair several times in Hazleton.

42. *Chelidon erythrogaster*. BARN SWALLOW.—Pretty generally distributed, though not very common in the mountains, this being probably due to the few good breeding sites available.

43. *Clivicola riparia*. BANK SWALLOW?—On one occasion I saw three

or four Bank, or Rough-winged Swallows on the Black Creek near Penn Haven Junction. I cannot say which species they were, however. I also saw them at Nescopeck, but failed to procure specimens there either.

44. *Ampelis cedrorum*. CEDARBIRD.—Very common throughout the region. I saw a flock of fifty or sixty of this species at Delano, on June 1, and observed them flocking again early in August.

45. *Vireo olivaceus*. RED-EYED VIREO.—Generally common.

46. *Vireo gilvus*. WARBLING VIREO.—Several seen at Nescopeck, but at no other point.

47. *Mniotilta varia*. BLACK AND WHITE WARBLER.—Observed at nearly every place visited. I found this species with large young at Harvey's Lake, on June 9, while at Pottsville, on July 7, I found a nest of four young just ready to fly.

48. *Helmitherus vermivorus*. WORM-EATING WARBLER.—Noticed at Pottsville on August 11, in company with a flock of Black and White Warblers and Chickadees.

49. *Compsothlypis americana*. PARULA WARBLER.—A few at Harvey's Lake, on June 9. A nest which I found was suspended something over twenty feet from the ground, very like a Vireo's nest, from a crotch in a branch. The moss must have been gathered by the birds as there seemed to be but little of it on the tree where the nest was. It contained one egg.

50. *Dendroica aestiva*. YELLOW WARBLER.—Several were seen in Pottsville and one or two in Hazleton. I heard them singing steadily till about the end of July, when they ceased and were no more in evidence.

51. *Dendroica maculosa*. MAGNOLIA WARBLER.—I found one family at Pottsville.

52. *Dendroica pensylvanica*. CHESTNUT-SIDED WARBLER.—Much commoner on the top of the mountains than lower down. At Delano I found it breeding in the scrub oaks, and at Harvey's Lake I found a nest in the laurel.

53. *Dendroica virens*. BLACK-THROATED GREEN WARBLER.—Pretty generally distributed throughout the coal belt. I found it breeding at Pottsville and saw one or two families near Penn Haven Junction. I also saw it at Mt. Carmel and near Audenried, and found three or four at Rock Glen.

A nest, which I found at Pottsville on June 23, was situated on the limb of a chestnut tree about thirty feet up and was covered by grape vines.

54. *Seiurus aurocapillus*. OVEN-BIRD.—Pretty common throughout the region.

55. *Seiurus motacilla*. LARGE-BILLED WATER-THRUSH.—On June 16, at Hamburg, I found a nest of this species containing four young but a few days old. It was situated in a bank by a stream of running water.

This record is of some interest as bearing out the experience of others in finding the Water-Thrush breeding well up along our principal rivers at Delaware Water Gap and one or two other points.

56. *Geothlypis trichas*. MARYLAND YELLOW-THROAT.—A common resident throughout, the region being perhaps more common on the mountains than lower down.

57. *Icteria virens*. YELLOW-BREASTED CHAT.—Found at Hazle Creek Junction, Hazleton, Morea and Mt. Carmel.

58. *Sylvania mitrata*. HOODED WARBLER.—Rather common at both Hamburg and Pottsville, but not extending north of the latter place.

59. *Sylvania canadensis*. CANADIAN WARBLER.—A pair seen at Delano, on June 29, and another at Hazle Creek Junction, June 19. Both pairs were seen in low damp ground and were feeding their young.

60. *Setophaga ruticilla*. REDSTART.—One family was seen at Pottsville and several individuals at Harvey's Lake.

61. *Galeoscoptes carolinensis*. CATBIRD.—Common throughout the region.

62. *Harporhynchus rufus*. BROWN THRASHER.—Generally disturbed, but not common.

63. *Troglodytes ædon*. HOUSE WREN.—Generally common, especially around Delano and Hazleton in the dead trees. I did not see them about Penn Haven Junction.

64. *Sitta carolinensis*. WHITE-BREASTED NUTHATCH.—Saw three or four at Mt. Carmel and one at Rock Glen.

65. *Parus atricapillus*. BLACK-CAPPED CHICKADEE.—A few seen at Pottsville, Hazleton and Penn Haven Junction.

66. *Turdus mustelinus*. WOOD THRUSH.—While pretty generally distributed, the Wood Thrush was rather more common at Pottsville and Rock Glen than further up the mountains.

67. *Turdus aonalaschkæ pallasii*. HERMIT THRUSH.—A pair observed near Pottsville and one also heard at Rock Glen, but I did not secure any specimens.

68. *Merula migratoria*. ROBIN.—Rather scarce all through the coal-fields.

69. *Sialia sialis*. BLUEBIRD.—On July 22 I heard three or four Bluebirds near Hazleton.

FEEDING HABITS OF THE ENGLISH SPARROW AND CROW.

BY SYLVESTER D. JUDD.

IN 'The English Sparrow in America' (Bull. U. S. Department of Agriculture) Prof. W. B. Barrows has shown what a pest the Sparrow is. I wish to comment upon several of the hundreds of